

## CLAIMS

### We Claim As Our Invention:

1. An apparatus comprising:
  - (a) a radio frequency (RF) transponder comprising an integrated circuit package containing at least electronic circuitry and memory, and an antenna operatively coupled to the integrated circuit package; and
  - (b) a non-linear magnetic material providing a varying electronic article surveillance magnetic field in response to an interrogating magnetic field, the non-linear magnetic material providing at least a portion of the tag antenna.
2. The apparatus of Claim 1, wherein the non-linear magnetic material further comprises an electrically conducting material layer affixed thereto.
3. The apparatus of Claim 1, wherein said non-linear magnetic material further comprises a parasitic element of the antenna.
4. The apparatus of Claim 1, wherein said non-linear magnetic material further comprises a tuning element of the antenna.
5. The apparatus of Claim 1, wherein said radio frequency (RF) transponder comprises a power supply.
6. The apparatus of Claim 5, wherein said power supply is contained in said integrated circuit package.
7. The apparatus of Claim 1, wherein said integrated circuit package comprises a chip having the antenna operatively coupled thereto.
8. The apparatus of Claim 7, wherein a power supply is contained in said chip.